Social and Relational Capital to Overcome Social Determinants of Health

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Study Title: Social and Relational Capital to Overcome Social Determinants of Health.

The community identified problem this project seeks to solve (380 characters):
Describe Goals

We look to implement the existing models created by The Open Table, Inc. to leverage social and relational capital and positively impact various Social Determinants of Health (SDOH) including: access to healthcare, healthcare outcomes (hospitalizations, ER visits, PCP visits), improve individual patient resilience. We further, look to positively impact burnout rates for providers that care for patients with difficult social barriers to care through enhanced community resources.

Describe your work on the problem thus far. Outline current data and results. Describe any prior projects and, if applicable, any funding sources (2200 characters):
Describe Preliminary Data

The Open Table is an existing 501c3 that establishes support "tables" of trained volunteers and community leaders (table members) that help individuals (friends) with an identified need (housing insecurity, food insecurity, access to healthcare problems, etc.) They accomplish this through the concept of leveraging social and relationship capital to problem solve with the friend. Data from an existing project/collaboration with Anthem Blue Cross has demonstrated the following outcomes for a group of 20 mothers with substance use disorder (SUD): 156% increase in relationships, 50% reduction in hospitalizations, 64% increase in drug sobriety, 40% increase in alcohol sobriety, 67% increase in stable housing, 46% increase in food security, 60% increase in employment. This project was 18-months long and all data was collected using The Accountable Health Communities Screening Tool.

Prior to joining Mayo Clinic, the principle investigator (Nathan Delafield, MD) worked at a Federally Qualified Health Center (FQHC) as an Internal Medicine Physician at Valleywise Health. Patients in this population suffer disproportionately from healthcare disparities as a result of barriers to Social Determinants of Health (SDOH). Further, healthcare workers in this setting often experience burnout from being unable to adequately help patients through complex, multifactorial SDOH issues that negatively impact their health.

Provide specific aims of this project (4500 characters - including spaces):
Describe Aims

The Centers for Disease Control and Prevention defines social determinants of health (SDoH) as conditions in the places where people live, learn, work, and play that affect a wide range of health and quality-of-life risks and outcomes. SDoH can be categorized into domains including healthcare access and quality, education access, economic/financial stability, neighborhood and built environment, and food security (See Figure 1; Healthy People 2030). According to the Kaiser Family Foundation, SDoH account for over a third of deaths in the US annually. Research suggests that addressing SDoH can help reduce health disparities especially among individuals from racial and ethnic minority (REM) populations (Thorton et al., 2016; Zhang et al., 2020). Despite the relationship between SDoH and healthcare outcomes, and health professionals acknowledging the utility of screening for SDoH, most clinicians do not feel confident in their ability to address SDoH and fewer routinely screen for SHoH (Schickedanz et al., 2019). There is also mixed opinions on the role of the medical workforce in addressing SDoH as some factors (e.g., housing) that are outside of the control of the healthcare system (i.e., upstream factors), however, professional societies including the American Academy of Pediatrics and the American Academy of Family Physicians recommend screening for SDoH (Davidson, McGinn, 2019). The medical team must be prepared to address SDoH if screening occurs, the lack of resources to address SDoH may prevent clinicians from screening for SDoH (Garg et al., 2016). Accordingly,

resources that can be used to address SDoH may improve compliance with SDoH screening, mitigate SDOH, and improve health outcomes, and reduce burdens placed on the medical workforce. Interventions to address SDoH are of interest to clinicians and medical systems.

This proposed study seeks to examine impact of an intervention to address SDoH among patients seeking care at a federally qualified health center (FQHC). FQHCs provide comprehensive care for medically underserved areas and populations, caring for about 30 million low-income patients annually with a higher prevalence of SDoH compared to the general population (Cole et al., 2022). The preliminary study will implement The Open Table model among patients at a local FQHC to determine whether the intervention reduces barriers to achieving optimal health outcomes (i.e., does the intervention reduce SDoH). The specific aims are listed below:

Aim 1: Determine the feasibility of implementing The Open Table model at a FQHC.
Hypothesis: None

Aim 2: Examine the impact of The Open Table model on social determinants of health in a healthcare setting with specific interest in access to care, hospitalizations, and social connectedness, individual capacity-building. We will collect pre-implementation data via structured interviews and SDoH data via the CMS Community Health Social Needs Screening tool on patients enrolled in this study to identify various metrics of SDoH including baseline number of of hospitalizations and number of ER visits within the previous year, perceived social support, access to food, housing, primary care visits. We will follow patients longitudinally as we implement the Open Table model of volunteers paired with a patient to determine the impact of social and relationship capital on these outcomes. Post-intervention survey data and interviews will be collected to measure impact. Hypothesis: Social support and enhanced relationships through the Open Table model will lead to reduced SDoH.

Aim 3: Examine the impact of enhanced community-based resources (The Open Table) on healthcare providers and social services personnel (the healthcare team) satisfaction. Specifically, we will be looking at the healthcare team's ability to deliver care and perceived satisfaction in caring for patients with a SDOH needs. Pre and post implementation data will be collected via the Maslach Burnout Inventory tool. We will examine structural and system-level barriers to healthcare delivery for patients with an identified SDOH need and explore the value and impact of The Open Table in these situations.
Hypothesis: Enhanced healthcare provider access to community-based resources through The Open Table model will lead to improved healthcare delivery, enhanced satisfaction and reduced burnout on the healthcare team for providers caring for patients with a SDOH need in an FQHC setting.

Describe the planned research approach including the community engagement approach (13,500 characters):
Describe approach
We will partner with a Federally Qualified Health Center (FQHC) at Valleywise health to identify and recruit patients into the study. Valleywise health is the largest safety-net healthcare organization in Arizona, serving over 430,000 ambulatory visits per year. They serve a patient population that is medically complex with challenging social barriers to healthcare including homelessness, substance abuse, food insecurity, illiteracy, etc. The healthcare team (providers and social workers) are often challenged by limited community resources to assist patient's through SDOH challenges.

We aim to recruit 30 patients (total) into this study to power the results sufficiently. These patients will have an identified SDOH need that is negatively impacting their health (as determined by the FQHC staff). Once referred, the patient will be screened with a SDOH screening tool (the CMS Accountable Health Communities Screening Tool) to establish a

baseline and interviewed to determine their individual needs, they will also complete the Brief Resilience Survey (BRS) in addition to semi-structured qualitative interviews. Screening and interviews will take place by the study coordinator and/or researchers. Once accepted into the study, the study staff will refer the participant to a member of The Open Table to implement The Open Table model (Network Table) and measure specific outcomes over the intervention period. Patient name, phone number, and email will be shared with The Open Table in order for them to contact the participants and learn more about their SDoH needs. The Network Table consists of 10 trained volunteers that will meet bi-weekly to address the patient's SDoH needs, prioritize interventions and meet with the patients as is appropriate and necessary to resolve each identified need. Once the patient's needs have been met, a seat at the table will become available and additional patients will be recruited to the table. If additional needs arise for individual patients (and there is capacity at the table) patients are welcome to rejoin the table to address additional needs throughout the 12-month study period.

We intend to implement community engagement in 2 ways. First, we will partner with a community organization/501c3 (The Open Table) to bring their model of leveraging social and relationship capital to the healthcare community. Second, we will partner with a Federally Qualified Health Center (FQHC) (Valleywise Health) to help patients with identified SDoH needs that would benefit from enhanced community-based resources. Additionally, we will partner with said FQHC to measure patient-specific impact (outcomes in relation to SDOH) and provider impact (measure impact on burnout).

Patients will be recruited to the study with the assistance of a research coordinator and in partnership with FQHC staff. This study will follow patients and providers (the healthcare team) for up to one-year post-enrollment, or until patient intervention is complete. Baseline data will be collected via structured individual patient interviews and by collecting baseline SDoH data via the CMS Accountable Health Communities Screening Tool, BRS tool. Screening data may be shared with The Open Table so they can better understand the needs of the participant. Once enrolled in the study, patients will be assigned to a Network Table of trained community volunteers that will support patients with a focus on overcoming SDoH needs to improve health. Each "table" of volunteers will be led by a project director, and each volunteer will be trained by The Open Table.

We will also recruit referring providers to the study (anticipate approximately 10 providers). These providers will be asked to complete the Maslach Burnout Index pre/post intervention.

Inclusion criteria: We will include patients that are age 18 or over with an identified SDOH need that impacts healthcare outcomes (identified by the healthcare team).

Exclusion criteria: non-english speaking patients, patients <18 years old, patients who are pregnant.

Recruitment: Potential participants with SDOH needs that are negatively impacting their healthcare will be referred by the FQHC healthcare team. Patients meeting inclusion criteria will be referred to the research team. Recruiting providers will provide eligible patients with a flyer with the research team contact information, once the flyer is returned to the research team the patient will be contacted for consideration of enrollment and consent. The research team will obtain consent for all patients appropriate for participation in the study. Providers that refer patients to the study will be asked complete a survey of baseline and post-intervention burnout (Maslach burnout inventory).

Measures:

Our primary outcomes will be responses to the following survey questions pre/post intervention: CMS Accountable Health SDOH Screening Tool and the Brief Resilience Scale (BRS).

Secondary outcome measures will include: # of hospitalizations and # of ER visits, # of primary care visits and perceived access to nutritious food, healthcare worker and/or social worker burnout evaluations (pre/post). Additionally, we will complete semi-structured qualitative interviews of each participant pre/post to determine the impact of this intervention on other aspects of their life/health.

Tertiary measures will be provider burnout scores pre and post intervention based on the Maslach Burnout Inventory.

We will obtain baseline data on # of hospitalizations in the prior 12 months, # of ER visits in the prior 12 months, # of primary care visits in the prior 12 months through patient interviews and use of the EMR. Patients will have SDoH screening via the CMS Accountable Health Communities Screening Tool at baseline. Additionally, each enrolled patient will be interviewed at baseline to understand their responses to the primary outcome measurements. To better understand the patient-specific variables that may contribute to SDoH challenges and outcomes we will also collect patient demographics (e.g., age, gender, race, ethnicity, marital status), medical information (e.g., medical comorbidities, current medications), socioeconomic status (e.g., education, income, employment), environmental data (e.g., address, census measures). Provider surveys will be collected using the Maslach Burnout Inventory.(pre and post intervention). These data will be collected via the electronic medical record, survey data from patients, and survey data from medical providers and healthcare staff.

Post-intervention we will measure patient-specific outcomes including: # of hospitalizations in the prior 12 months, # of ER visits in the prior 12 months, # of primary care visits in the prior 12 months through patient interviews and use of the EMR. Patients will have SDoH screening via the CMS Accountable Health Communities Screening Tool and the Brief Resilience Scale (BRS) after completion of the intervention. We will also collect provider survey's using the Maslach Burnout Inventory.

Statistical Analysis:

Primary outcomes will be measured by:

Difference in proportion (before vs after intervention) in SDOH status and resilience score.

Secondary outcomes will be measured by:

Difference in number of hospitalizations in the 12 months before vs 12 months during intervention, difference in number of ER visits in the 12 months before vs 12 months during intervention, difference in number of primary care visits in the 12 months before vs 12 months during intervention, difference in proportion (before vs after intervention) of patients answering that they perceive they have access to nutritious food, difference in proportion (before vs after intervention) of patients answering that they perceive they have access to nutritious food.

Baseline patient demographics and clinical characteristics will be descriptively summarized. Differences in categorical endpoints before vs after the intervention will be tested using McNemar's test for paired proportions, or exact McNemar's test for small sample sizes. Differences in continuous endpoints before vs after the intervention will be tested using paired t-tests, or appropriate non-parametric test.

The semistructured interview (qualitative data) will be analyzed separately for significant impact, trend and analysis.

Provider data that are recruited for analysis of burnout will be analyzed in difference in proportion to responses pre/post on the Maslach Burnout Inventory. Given the # (10) of participants in this section, we do not expect to reach statistical significance (due to inadequate power) but we will use this as an exploratory outcome.

Power Analysis:

With a sample size of 30, both combinations of before/after proportions are expected to have at least 80% power, assuming we use alpha 0.05 for testing. If we correct for multiple testing (2 primary outcomes) using a Bonferroni-adjusted alpha of 0.025, both combinations of proportion assumptions are expected to have close to or above 80% power to detect a difference before vs after intervention.

What will the project deliver? How will it lead to improvements in community health? (4500 characters):
Describe Outcomes
The 2019 Mayo Clinic Arizona Community Health Needs Assessment (CHNA) identified priority areas in healthcare access, social determinants of health and homelessness. This project intends to directly address these priorities areas while strengthening community partnerships. Through ongoing community collaboration, Mayo Clinic in Arizona will be better equipped to meet the needs of the larger community in which we reside. Physicians recognize the need to address SDoH as a root cause of much disease and suffering. Unfortunately, physicians and the traditional healthcare system are ill-equipped to sufficiently address these issues due to a lack of community resources, time constraints, poor understanding of community dynamics (social, cultural, relational, political). We desperately need a more viable option to leverage community resources, social support, relationships to overcome barriers in SDoH.

This project will demonstrate an innovated approach to overcoming SDoH barriers. This project is expected to improve patient-specific SDoH outcomes (reduced hospitalizations, reduced ER visits, enhanced sense of community relationships and access to community resources). Further, we anticipate that this is a novel way to reduce the burden and burnout on our healthcare workforce (providers and social services staff), giving them a viable community-based resource to help patients through SDoH challenges. The data from this project will provide proof of concept and allow us to apply this model to various other patient populations (substance abuse, behavioral health, chronic pain).

Collaboration with Valleywise health is strategic and important as we look to expand our outreach, research diversity and healthcare impact in Arizona. As the largest safety-net hospital in Arizona, Valleywise health serves a tremendously diverse patient population with unique social and socio-economic barriers to healthcare. This project could strengthen our partnership by providing Valleywise health patient's with additional resources. Through this project and gesture, our collaborative efforts moving forward (cancer research for instance) may be more viable through built trust.

Please insert keywords related to your application. Keywords are crucial to assigning reviewers, matching the appropriate expertise to your proposal.
Use Medical Subject Headings (MESH) terminology from the NIH National Library of Medicine.
Keywords

Social Determinants of Health, SDOH, Healthcare disparities, Substance use disorder, Housing insecurity, food insecurity, Opioid Use Disorder, Healthcare utilization